



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/078,256 | 02/20/2002 | Kenneth K. Li | 2138-239 | 3227 |
| 6449 | 7590 | 12/22/2004 | EXAMINER | |
| ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005 | | | PAYNE, SHARON E | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2875 | |

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 10/078,256 | Applicant(s) LI, KENNETH K. | |
| | Examiner Sharon E. Payne | Art Unit 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
 4a) Of the above claim(s) 3, 11-27 and 29-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-10 and 28 is/are rejected.
- 7) ☒ Claim(s) 34-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. Claims 1 and 4 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,227,682 in view of Turnbull et al. (U.S. Patent 5,803,579).

| Claim | Claims of U.S. Patent 6,227,682 | Turnbull et al. |
|-------|---------------------------------|---|
| 1 | 1 and 2 | filament lamp (column 15, lines 40-41) |
| 4 | 1 and 2 | A tungsten filament lamp (column 15, lines 40-41) |

Regarding claims 1 and 4, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the tungsten filament lamp of Turnbull et al. in the apparatus of Li (U.S. Patent 6,227,682) to achieve "spectral power distributions which are relatively constant over a broad band of wavelengths" (column 15, lines 40-45 of Turnbull et al.).

2. Claim 2 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,227,682 in view of Turnbull et al. as applied to claim 1 and further in view of Strobl (U.S. Patent 5,414,600), hereinafter Strobl 600.

| Claim | Claims of U.S. Patent 6,227,682 | Turnbull et al. | Strobl 600 |
|-------|------------------------------------|---|--|
| 2 | 1 and 2 | Filament lamp (column 15, lines 40-41) | A spherical retro-reflector (reference number M4) disposed on a side of the filament lamp opposite the first reflector structure to reflect electromagnetic radiation emitted from the filament lamp in a direction away from the additional reflector toward the first reflector structure through the first focal point of the first reflector structure (Fig. 8). |

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the spherical retro-reflector of Strobl 600 on one side of the filament lamp of Turnbull et al. in the apparatus of U.S. Patent 6,227,682 to "conserve[] the brightness of the source". See column 2, lines 55-60 of Strobl '600.

3. Claims 5 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,227,682 in view of Turnbull et al. as applied to claim 1 and further in view of Dorman (U.S. Patent 4,149,227).

| Claim | Claims of U.S. Patent 6,227,682 | Turnbull et al. | Dorman |
|-------|------------------------------------|--|---|
| 5 | 1 and 2 | Filament lamp (column 15, lines 40-41). | A first reflector structure that has a coating that reflects substantially only a pre-specified portion of the electromagnetic radiation spectrum (column 9, line 66, to column 10, line 5) |
| 6 | 1 and 2 | Filament lamp (column 15, lines 40-41) | The pre-specified portion as visible radiation (column 9, line 66, to column 10, line 5). |

Regarding claims 5 and 6, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the coating of Dorman in the apparatus of U.S. Patent

6,227,682 to take the infrared portion of the spectrum out of the light, resulting in cool light. See column 10, lines 1-5 of Dorman.

4. Claims 7, 8, 9 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,227,682 in view of Turnbull et al. as applied to claim 1 and further in view of Junginger (U.S. Patent 3,772,506).

| Claim | Claims of U.S. Patent 6,227,682 | Turnbull et al. | Junginger et al. |
|-------|------------------------------------|---|--|
| 7 | 1 and 2 | A filament lamp (column 15, lines 40-41) | An output light pipe (Fig. 1) having an input surface and an output surface (Fig. 1), the input surface being located proximate to the second focal point to collect substantially all of the radiation (Fig. 1) wherein the output surface transmits substantially all of the |

| | | | |
|----|---------|---|--|
| | | | radiation (Fig. 1). |
| 8 | 1 and 2 | A filament lamp (column 15, lines 40-41) | The light pipe being comprised of glass (column 2, lines 10-15) |
| 9 | 1 and 2 | A filament lamp (column 15, lines 40-41) | A straight light pipe (Fig. 1) |
| 10 | 1 and 2 | A filament lamp (column 15, lines 40-41) | A light pipe having a circular cross-section (Fig. 1). |

Regarding claims 7, 8, 9 and 10, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light pipe Junginger et al. in the apparatus of U.S. Patent 6,227,682 and Turnbull et al. to transmit light using total internal reflection, thus retaining nearly all of the light being retained during transmission. See column 3, lines 15-20, of Junginger.

5. Claim 28 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 28 of U.S. Patent No. 6,619,820 in view of Fjaestad et al. (U.S. Patent 5,873,646).

| Claim | Claim of U.S. Patent 6,619,820 | Fjaestad et al. |
|-------|-----------------------------------|-----------------|
| | | |

| | | |
|----|----|---|
| 28 | 28 | Positioning a filament lamp at a first focal point on a first reflector structure (Fig. 3) and producing rays of radiation by the filament lamp (Fig. 3); and reflecting at least part of a portion of the rays of radiation that do not impinge directly on the first reflector structure toward the first reflector structure through the first focal point of the first reflector structure (Fig. 3, reflector 46) |
|----|----|---|

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the filament lamp and the step of reflecting rays back to the first reflector structure of Fjaestad et al. in the process of U.S. Patent 6,619,820 to enable one to use the length of the filament to produce light that is reflected by a longer length of the reflector structure, thus using the length of the filament to make better use of the surface area of the reflector structure. See column 3, lines 28-37, of Fjaestad et al.

Allowable Subject Matter

6. Claims 34-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to show an illumination system with the following features:

1) the first reflector portion and the second reflector portion being at least a portion of a substantially paraboloid surface as recited in claims 34 and 35; and

2) the first reflector portion and the second reflector portion being arranged substantially symmetrically such that the first and second optical axes are substantially collinear as recited in claims 36 and 37.

Response to Arguments

7. Applicant's arguments filed October 13, 2004 have been fully considered but they are not persuasive. Applicant argues that persons of ordinary skill in the art would not have modified Li '682 to accommodate a filament lamp. To the contrary, the specification of Li '682 indicates that filament lamps may be used under certain conditions (column 4, lines 38-40). The fact that these lamps are permitted under certain circumstances fails to teach away from the use of filament lamps.

The other arguments are either accepted or rendered moot due to new grounds of rejection and indications of allowable subject matter. Please note that the motivation for combining Dorman for claims 5 and 6 is found within Dorman, which constitutes evidence that this information was available to one of ordinary skill in the art. Please note that the motivations have been changed, and they come from appropriate references.

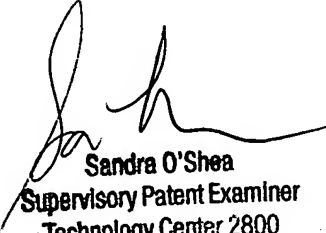
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sep


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800